

## **AMENDMENTS TO THE CLAIMS**

The following listing of claims will replace all prior versions, and listings, of claims in the application:

### **Listing of Claims:**

1. (Previously Presented) A machine reaming tool, comprising:  
a shaft (2); and  
an exchangeable, single-piece interchangeable head (1), wherein the interchangeable head (1), in an axial direction and at each location, thus including the means for exchange adaptation, is thinner than a maximal thickness  $h_{\max}$ , wherein this maximal thickness  $h_{\max}$  in millimeters is computed from a diameter D1 of the interchangeable head in millimeters as  $h_{\max} = 6\text{mm} + (1/10) \cdot (D1 - 12\text{mm})$ .
2. (Previously Presented) A machine reaming tool according to claim 1, wherein the interchangeable head (1), in a plane, shaft-side end-face (15) comprises a cutout (50) designed as a connection element, for the centering fastening of the interchangeable head (1) on the shaft (2), and that the shaft (2) on an end-side plane surface (25) comprises a connection lug (21) projecting from said plane surface (25) in the axial direction, said lug corresponding to the cutout (50) of the interchangeable head (1).
3. (Original) A machine reaming tool according to claim 2, wherein the interchangeable head (2) at least in places compresses the connection lug (21) of

the shaft (2) when pressing the interchangeable head (11) against the shaft (2) in the axial direction.

4. (Previously Presented) A machine reaming tool according to claim 3, wherein on the interchangeable head (1), the cutout (50) formed as a connection element forms an axially central conical socket (11) for centering the interchangeable head (1) on the shaft (2), and the connection lug is a corresponding conical projection (21) on the shaft (2).

5. (Original) A machine reaming tool according to claim 4, wherein on the interchangeable head, the conical socket (11) comprises at least three exposed contact segments (52).

6. (Original) A machine reaming tool according to claim 2, wherein the cutout (50) formed as a connection element, in the end-face (15) of the interchangeable head (1), is cylindrical, and that the interchangeable head (1) on assembly on the shaft (2), may be brought into contact with a cylindrical connection element (27) of the shaft (2) at three locations (51, 52; 53) of the inner cylinder periphery.

7. (Original) A machine reaming tool according to claim 6, wherein the cutout (50) formed as a connection element, in the end-face (15) of the interchangeable head (1) is essentially circularly cylindrical, and in each case comprises a contact segment (51, 52) or a contact point, at three locations of the inner cylinder periphery, at which the cutout (50) is formed somewhat more narrowly, and that a part of the

shaft (2) which is designed as a connection element (27) is designed essentially circularly cylindrical.

8. (Previously Presented) A machine reaming tool according to claim 7, wherein an extension of one of the contact segments (51) in the peripheral direction is comparatively larger than the extension of the two other contact segments (52), in particular is one and a half to two times larger, and that corresponding to this, the shaft (1) comprises a plane surface (28) on a part sector of the periphery.

9. (Previously Presented) A machine reaming tool according to claim 1, wherein the interchangeable head (1) comprises a first side and an oppositely lying side, and may be assembled selectively with the first or the second side against the shaft (2) and may be used for reaming in both cases.

10. (Previously Presented) A machine reaming tool according to claim 1, further comprising a machining tool (200) which is fastened coaxially to the interchangeable head (1) on the shaft (2).

11. (Original) A machine reaming tool according to claim 10, wherein the further machining tool (200) is designed with a smaller machining diameter than the interchangeable head (1).

12. (Previously Presented) A machine reaming tool according to claim 10, wherein the further machining tool (200) includes fastening means which are central

with respect to an axis of the shaft (2), and the interchangeable head (1) with several fastening means arranged next to the axis of the shaft (2), and the machining tool may be assembled on the shaft (2).

13. (Previously Presented) A machine reaming tool according to claim 1, wherein the interchangeable head (1) comprises several cutters (16), and each of the cutters (16) is formed on a first side of the interchangeable head (1) as well as on a second side of the interchangeable head (1), for cutting, and for this comprises a leading cut portion with a back-off clearance.

14. (Original) A machine reaming tool according to claim 13, wherein the cutter (16) on the first side of the interchangeable head (1) comprises a first leading cut portion (171) with a back-off clearance of firstly  $3^{\circ}$  to  $10^{\circ}$  and then, after 0.05 to 1 mm in the peripheral direction, of  $10^{\circ}$  to  $20^{\circ}$ , and on the second side of the interchangeable head (1) comprises a second leading cut portion (172) with a back-off clearance of  $10^{\circ}$  to  $20^{\circ}$ .

15. (Previously Presented) An interchangeable head for a machine reaming tool, said interchangeable head being formed as one piece, wherein the interchangeable head (1) in an axial direction and at each location, thus including the means for exchange adaptation, is thinner than a maximal thickness  $h_{\max}$ , wherein this maximal thickness  $h_{\max}$  in millimeters is computed from a diameter D1 of the interchangeable head in millimeters as  $h_{\max} = 6\text{mm} + (1/10) \cdot (D1 - 12\text{mm})$ .

16. (Original) An interchangeable head (1) according to claim 15, wherein the interchangeable head (1) in the axial direction has a thickness of maximally 6 mm, preferably maximally 5 mm or less.

17. (Previously Presented) An interchangeable head (1) according to claim 15, wherein the interchangeable head (1) comprises a cutout (50) designed as a connection element, for the centering fastening of the interchangeable head (1) on a shaft (2).

18. (Previously Presented) An interchangeable head according to claim 17, wherein the cutout (50) designed as a connection element forms an axially central conical socket (11).

19. (Previously Presented) An interchangeable head (1) according to claim 15 wherein the interchangeable head (1) is manufactured of a material manufactured by sintering, such as hard metal, cermet, ceramic or CBN (cubic boron nitride).

20. (Previously Presented) An interchangeable head (1) according to claim 15 wherein the interchangeable head (1) comprises several continuous bores in the axial direction, each with a recess (14) for accommodating a screw head.

21. (Previously Presented) An interchangeable head (1) according to claim 17, wherein the interchangeable head (1) has a first side and an oppositely lying second side, and may be selectively assembled with the first or the second side against the

shaft (2), and in both cases may be used for reaming.

22. (Original) An interchangeable head (1) according to claim 21, wherein the interchangeable head (1) comprises continuous bores as connection means (197, 198) for assembly, selectively with the first or the second side against the shaft (2).

23. (Previously Presented) An interchangeable head (1) according to claim 21 comprising two coaxial conical sockets (195, 196) for centring the interchangeable head (1), wherein each of the two conical sockets (195, 196) leads to the inside in each case from one of the sides of the interchangeable head (1).

24. (Previously Presented) An interchangeable head according to claim 21, comprising several cutters (16), wherein the cutters (16), proceeding from a first side (193) of the interchangeable head (1) comprise a first leading cut portion (171), then a first reaming corner (191) and then a first section (181) of a guide portion (18) which tapers towards the middle of the cutter (16), as well as proceeding from a second side (194) of the interchangeable head (1), a second leading cut portion (172), then a second reaming corner (192) and then a second section (182) of the guide portion (18) which tapers towards the middle of the cutter (16).

25. (Previously Presented) An interchangeable head according to claim 24, wherein the cutters (16) in their middle comprise a groove running transversely to the guide portion (18).

26 (Previously Presented) An interchangeable head (1) according to claim 15, wherein the interchangeable head (1) comprises several cutters (16), and each of the cutters (16) is formed on a first side of the interchangeable head (1) as well as on a second side of the interchangeable head (1), for cutting, and for this comprises a leading cut portion with a back-off clearance.

27. (Original) An interchangeable head (1) according to claim 26, wherein the cutter (16) on the first side of the interchangeable head (1) comprises a first leading cut portion (171) with a back-off clearance firstly of 3° to 10° and then, after 0.05 to 1 mm in the peripheral direction, of 10° to 20°, and on the second side of the interchangeable head (1) comprises a second leading cut portion (172) with a back-off clearance of 10° to 20°.

28. (Previously Presented) A shaft (2) for a machine reaming tool, comprising an essentially rotationally symmetrical shaft with an end-face plane surface (25), wherein the shaft (2) comprises a connection lug (21) projecting out of the plane surface (25), for assembly of an attachable interchangeable head (1).

29. (Currently Amended) AThe shaft (2) according to claim 28, wherein the connection lug is a conical projection (21) projecting from an end-side plane surface (25) of the shaft (20) in the axial direction by less than 4 mm.

30. (Previously Presented) A shaft (2) according to claim 28, further comprising means for fastening an exchangeable cutting tip (1) and means for fastening a

further machining tool (200).

31. (Original) A shaft (2) according to claim 30, wherein the means for fastening the further machining tool (200) is a first bore for receiving a screw or a tie rod, and is arranged axially centrally in the shaft (2), and the means for fastening the exchangeable cutting tip comprises a plurality of threaded holes which are arranged around the first bore.

32. (Previously Presented) A method for manufacturing an interchangeable head (1) according to claim 14, comprising the following steps:

- reaming a bore to a nominal dimension by way of the first leading cut portion (171) and above all by way of a reaming corner (181) on the front side of the cutters (16);
- milling a chamfer at the exit of the bore by way of the second leading cut portion (172) on a rear side of the cutters (16).

33. (Previously Presented) A method according to claim 33, comprising the preceding step:

- milling a chamfer at the entry of the bore by way of a first leading cut portion (171) on the front side of the cutters (16).

34. (New) The machine reaming tool according to claim 1, wherein the interchangeable head (1) does not comprise an axially projecting lug for exchange adaptation.



35. (New) The machine reaming tool according to claim 1, wherein a cutout, on the end-face of the interchangeable head which is distant to the shaft, forms a cutout for a screw head, such that the screw head may be sunk in the interchangeable head.

36. (New) An interchangeable cutting head for a machine reaming tool, said interchangeable head being formed as one piece, characterized in that the interchangeable head (1) in the axial direction and at each location, thus including the means for exchange adaptation, is thinner than a maximal thickness  $h_{\max}$ , wherein this maximal thickness  $h_{\max}$  in millimeters is computed from a diameter  $D1$  of the interchangeable head in millimeters as  $h_{\max} = 6\text{mm} + (1/10) \cdot (D1 - 12\text{mm})$ , that the interchangeable head (1) in a plane, shaft-side end-face (15) comprises a cutout (50) designed as a connection element, for the centering fastening of the exchange head (1) on a shaft (2), that the cutout (50) forms an axially central conical socket (11) and that the interchangeable head (1) does not comprise an axially projecting lug for exchange adaptation.

37. (New) The interchangeable cutting head according to claim 36, wherein a cutout, on the end-face of the interchangeable head which is distant to the shaft, forms a cutout for a screw head, such that the screw head may be sunk in the interchangeable head.

38. (New) The shaft (2) according to claim 29, wherein the conical projection

(21) projects from the end-side plane surface (25) of the shaft (2) in the axial direction by less than 2 mm.

39. (New) The shaft (2) according to claim 29, wherein the connection lug (21) of the shaft is compressible at least in places by an interchangeable head (1) mounted on the shaft.

|